

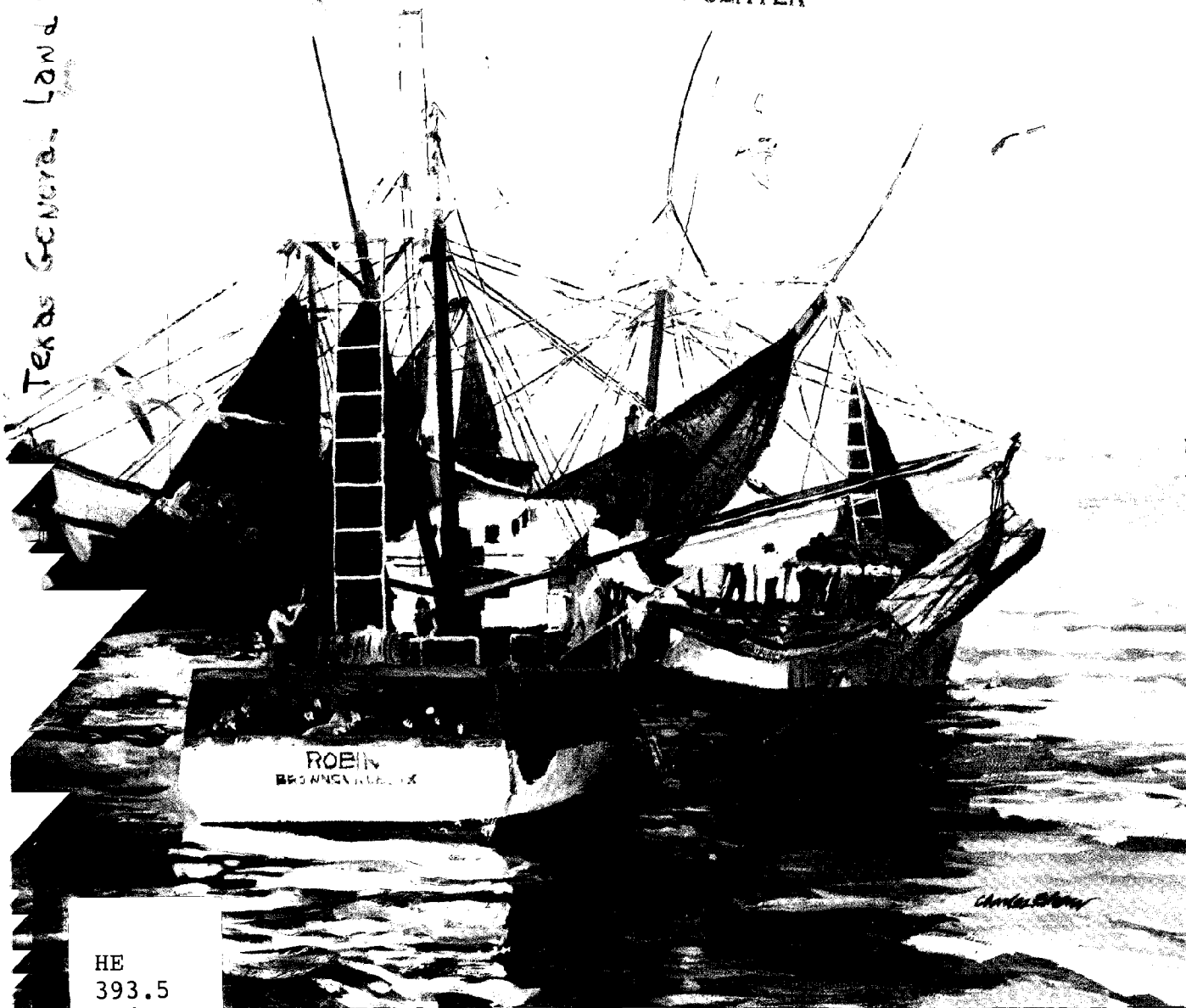
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TEXAS COASTAL MANAGEMENT PROGRAM 2ND YEAR

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THE TEXAS COASTAL MANAGEMENT PROGRAM

SECOND YEAR WORK PROGRAM

August 1, 1975

U. S. DEPARTMENT OF COMMERCE NOAA
COASTAL SERVICES CENTER
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General Land Office, State of Texas

Coastal Management Program

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ABSTRACT

The Texas Coastal Management Program was initiated in order to design a flexible policy-planning process which will ensure a continuing balance between future social, economic, and environmental needs. The program's objective is to develop and recommend to the Legislature and the public an improved process for decision-making affecting allocation of coastal resources, and to propose steps for implementing this process. Present resource uses and the constraints and opportunities for more effective protection and use of those resources must be determined; alternative uses and use priorities in terms of existing law and policy must be examined; and organizational changes necessary to effect the alternative resource development and use policies must be evaluated.

Projected demands on coastal resources in relation to the resource base's capability to sustain those demands are under study on several fronts. Governmental entities with responsibility for regulation, protection, and planning in the coastal region have been identified.

Public participation in gathering information and making suggestions will be integral throughout all stages of the developmental process and is being solicited through hearings, workshops, and mailings. In addition, the Commissioner of the General Land Office has appointed a citizens' advisory committee to work with the staff to assure full public involvement in program development.

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INTRODUCTION

At the request of Governor Briscoe and in cooperation with other state agencies, the General Land Office is conducting the program development phase of the Texas Coastal Management Program. Initiated in June of 1974, this phase of the program is a three-year program development process. Its purpose is to develop a planning process that will support decision-making by the Legislature and the people of Texas concerning the use of their coastal resources. The goal is to ensure that future development of the Texas coast meets future needs, and is consistent with articulated social, economic, and environmental goals.

This program development effort is being jointly funded by the State of Texas and by grant funds from the United States Department of Commerce under the Coastal Zone Management Act of 1972.

Congress passed the Coastal Zone Management Act in response to a growing awareness of the value of coastal areas to the nation's economy and of the potentially adverse consequences of coastal development undertaken outside the context of planned objectives. The Act does not require the establishment of coastal management programs, but offers financial and political incentives to encourage state planning processes for developing and managing coastal resources. Federal matching grants are offered to the states for both developing and implementing coastal programs. In addition, and perhaps more importantly, the Act offers the incentive that most federal activities affecting a state's coastal area will be required to conform

with the state's approved program.

Texas saw in the Coastal Zone Management Act an opportunity to continue to enhance its own coastal management activities. Long before passage of the federal Act, Texas demonstrated its awareness of the significance of its coastal resources through legislative action. State laws, programs, and plans affecting the Texas coastal region date from as early as 1911, when the first statutes regulating the dredging and filling of bay bottoms were enacted. In recent years, there has been wider recognition of the importance of coastal resources to the state's prosperity and of the need to ensure the continued productivity of these resources. Extensive studies made of the coastal region have led to the passage of numerous statutes asserting and protecting the public interest in coastal resources. The first far-reaching coastal law was the Open Beaches Act of 1959.

A study conducted in 1967 by the Interim Beach Study Committee revealed the need for a comprehensive study of the Texas coast, covering not only natural features and processes, but also the economic impact of coastal development. The Coastal Resources Management Program was created by the Governor in 1969 to meet this need by studying coastal problems, inventorying resources, and recommending changes in state policy and law. The four-year program compiled information on economic development, bay and estuarine management, institutional structures, waste management, transportation, and power plant siting. The work of this program is reflected in coastal legislation passed by the Texas Legislature since 1969, notably,

the Coastal Public Lands Management Act and the Sand Dune Protection Act. The studies conducted by the Coastal Resources Management Program provided the point of departure for the present Coastal Management Program.

Because Texas has been providing financial assistance to the coastal studies of state agencies and educational institutions for many years, much information relevant to coastal management is already available. Further efforts are necessary, however, to incorporate these studies into a comprehensive planning and management process.

State and local governmental entities having responsibility and authority in the coastal region have undertaken the job of planning and study of enforcement mechanisms necessary to manage the coast. The current program offers a mechanism to coordinate these planning and management efforts to address issues of statewide concern.

Coastal research must be integrated to yield the wider perspective necessary for effective management. Coordination of the various governmental authorities with coastal responsibilities is desirable in order to eliminate duplication of effort and to simplify governmental processes. These unification efforts are fundamental to the management process being developed by the Coastal Management Program.

In addition to coordinating governmental activities, the program is intended to develop a means to assess the respective consequences of various alternative coastal development patterns and then to state how each might be achieved. These alternatives will be presented to

the public and the Legislature for choice and implementation.

The program development process comprises four major undertakings:

1. To identify and confirm significant issues to be addressed by statewide coastal policies and objectives
2. To establish technical means for evaluating policy alternatives
3. To develop the legal and institutional means and structure necessary to conduct the coastal management activities required to satisfy state policy
4. To develop means for public information and participation

The initial work plan outlined in the first year listed six issues to be studied: economic development; urban population growth; fresh water supply; local control; residential, resort, and second home development; and power plant siting. The first year of work confirmed the importance of these issues and revealed that several additional topics present major coastal management issues. Those identified for special study are navigational development, the management of dredged materials, permitting processes, natural hazards, and the impacts of offshore petroleum developments. Other issues suggested for study include those issues associated with recreational development, tourism, and coastal agriculture. Preliminary studies and public hearings also indicated the need to supply state, local, public, and private decision-makers with better technical information about the effects of alternative uses of coastal resources.

Public participation is essential to effective coastal management and is being encouraged in all phases of program development. Technical data alone are insufficient for resource allocation decisions. If management is to be responsive to the needs of the people

of the state, those with interests in the coastal area must indicate their preferences, the problems they have experienced or recognize, and the solutions they think most advisable. The Coastal Management Program's effort to involve the public in program development is extensive. In addition to holding public hearings and workshops, the program is soliciting continuing public comment. A questionnaire was mailed to known interest groups, a brochure and copies of reports prepared by the program have been widely distributed, and special meetings have been held with various coastal groups. A citizens' advisory committee has been appointed to review and comment upon program progress. Close coordination is being sought among the program, the public, and local, regional, state, and federal agencies cooperating in program development.

THE FIRST YEAR: June 1, 1974 - May 31, 1975

Prior to receiving federal funds, the Texas Coastal Management Program began systematizing management of the 4,000,000 acres of state-owned coastal lands. The first year of federal assistance for the state's efforts began in June, 1974, and during the following four months, five tasks were performed. First, a survey was made of the relevant federal, state, and local governments to determine their jurisdictions. This inventory confirmed to the program staff and interested public the complexity of the governmental authority which affects the coast. It also underscored the need for both a thorough review of coastal permitting processes and a clear explanation of state policy as it is reflected in various agency programs. A Texas Coastal Management Program report entitled Present Authority summarizes the information gathered in this inventory.

The second task was to identify and catalogue the existing research, data, and planning resources available to the program. This survey helped the program staff to identify the primary coastal issues and provided a valuable means for opening communication channels with other research and planning groups. Information gathered under this project may be found in a Texas Coastal Management Program report entitled Existing Data.

Third, local, regional, and state interest groups were identified and invited to participate in an initial set of hearings. Following these, the fourth task was to conduct hearings for all interested

groups. These hearings, chaired by the Commissioner of the General Land Office, were coordinated through the five councils of governments (COG's) in the coastal area, through the Interagency Council on Natural Resources and the Environment (ICNRE), and through the Texas Coastal and Marine Council. They were held in Harlingen, Corpus Christi, Victoria, Beaumont, Houston-Galveston, Bay City, and Austin. The information obtained from this public participation effort was summarized in a report entitled Public Participation.

The fifth task was a review of prior studies suggesting a definition of the state's coastal region. This effort confirmed the tentative selection of the two tiers of counties nearest the coast; however, it became clear that this matter called for much further investigation and public commentary.

These initial five tasks were completed in September, 1974, and a series of technical studies began which will be concluded in October, 1975. The objectives of this technical study phase are

1. to find the best technical means available to evaluate the demand for coastal resources and the capability of coastal resources to satisfy that demand,
2. to evaluate alternative management arrangements, and
3. to establish and maintain close coordination with all interested groups and governmental entities.

The technical studies fall into three categories: resource demands, resource capabilities, and institutional structures.

Since the work being done is detailed and technical, public participation in the technical stage is indirect. Several features of the coastal program, however, are intended to preserve the openness of the program development process. Because of project coordination,

representatives of a great variety of interests will be involved in the technical work. Second, the Commissioner of the General Land Office has appointed a citizens' advisory panel, drawn from coastal leaders and other citizens who participated in public hearings and workshops. This panel reflects diverse regional, economic, educational, and political facets of the state and will advise on both technical and general policy matters. Study materials and work products will be widely distributed to the public to promote review and suggestions, in preparation for the workshops and public hearings.

Coordination at the state level is being established principally through the ICNRE. The ICNRE has been briefed on the coastal program and will review work products and assist in program development. A mechanism for federal coordination with the program development process has been established through the Federal Regional Council.

SECOND YEAR WORK PROGRAM

This section presents the elements of the program development process which are to be performed in the second year. In describing each task of this work program, an effort has been made to note both the available information resources which are pertinent to the task and the entities whose interests are affected. The identification of these resources and interests is a continuing process, and efforts will be made to establish coordination with all entities declaring an interest in the task and with all ongoing research in Texas. The universities, and particularly the Sea Grant program at Texas A&M University, are especially important in this regard. Texas universities conduct a variety of collateral research and maintain facilities which are needed to conduct research for the program.

TASK 1: RESOURCE DEMAND ANALYSIS

During the second year of the Coastal Management Program, the resource demand analysis begun in the first year will be completed, and a report of the results of the study will be prepared. This study, although satisfying guidelines issued pursuant to the Coastal Zone Management Act, is a standard economic description and analysis.

The following subtasks have been undertaken to provide baseline information for the discussion of the economic aspects of coastal problems:

- a. The identification of economic factors external to the coast which may have an impact within the coastal area
- b. The identification of economic activities peculiar to the coast
- c. An inventory of federal, state, and local government plans which may result in added land and water uses in the coastal area
- d. An estimate of the potential demand for economic activities on the coast which both utilize and exert an impact upon coastal natural resources
- e. The identification of existing and potential uses which may have impacts of greater than local significance

The report will describe the nature of the problems addressed by the program and their relationship to existing economic activity. In addition, it will contain economic projections showing potential changes under certain assumptions about production relationships, population growth, and development along the coast.

These projections will be made with the data currently available and will incorporate work by state and local planning groups and the university community: the General Land Office, the Texas

Water Development Board, the Governor's Office, the Texas Highway Department, the Texas Parks and Wildlife Department, the Texas Industrial Commission, Texas A&M University, The University of Texas, port and harbor authorities, navigation districts, councils of governments, the Greater South Texas Cultural Basin Commission, and the Council for South Texas Economic Progress. The final method of presenting and analyzing the data will rely primarily upon the input-output technique of economic analysis.

The main purpose of the economic description and projections will be to illustrate the economic relationships along the coast in order to provide a basis for understanding the problems and their causes. An understanding of these relationships will also provide a starting point for an analysis of possible solutions to problems later identified.

The report presenting the economic descriptions and projections will include the following topics:

- I. General description of the coastal area
 - A. Physical
 - B. Biological
 - C. Economic
- II. Description of regions
 - A. Method of delineation
 - B. Economic activity
 - C. Demographic characteristics
- III. Identification of problems
 - A. Competition for scarce resources
 1. Land
 2. Coastal waters
 3. Fresh water
 - B. Externalities (use impacts)
 - C. Allocation mechanisms
 1. Market
 2. Government
- IV. Discussion of economic models

- A. Descriptive/analytic
- B. Alternatives used by others
- C. Input-output
- V. Input-output models of regions
 - A. Data alternatives and ultimate choices
 - B. Intraregional linkages
 - C. Presentation of models
- VI. Regional projections
 - A. Known plans for development
 - B. Alternative population projections
 - C. Alternative employment projections
 - D. Other potential changes
 - E. Regional input-output projections

These technical economic descriptions and their counterparts in the resource capability task--the resource maps, budgets, and inventories--provide a necessary point of departure; however, the separate descriptions are insufficient as management tools. To better understand the trade-offs implicit in economic growth, the information contained in these separate technical studies should be merged. A demonstration and description of the relationships between resource demands and resource capability would provide a better basis for understanding the consequences and requirements for development, and would provide an improved method for previewing the options facing public and private planners.

Resource systems have many uses, and a draw by one use may affect the availability of the resource system to another. If management is to be effective, the questions of how and what to encourage or discourage must be addressed. However, determinations of this sort require much more quantification than is presently possible. The program is assessing the usefulness of a series of matrices linking economic activity to effects on the natural system. Although this approach is in its formative stages, discussions with state agencies

indicate it is compatible with the research in progress.

This matrixing technique would employ the resource capability units described by the resource capability study and the activities which are known to impact those units. A matrix relating the impacting activities to their possible effects can be constructed. The cells within such a matrix indicate which activities have which effects. A second matrix can be constructed which relates effects to resource capability units, important organisms, and facets of the natural systems necessary to support various activities.

Starting again with impacting activities, a third matrix can be constructed which relates actions such as dredging, bulkheading, pipeline placement, and water impoundment to economic sectors. This matrix, like the others, is a descriptive device which allows a tracing of actions which are implicit in economic production and consumption to the supportive and/or impacted natural systems.

It should be noted that, as presently envisioned, the matrices are qualitative and descriptive. As such, they provide only a "road map" of resource uses and impacts. These uses and impacts constitute a check list of potential results of change in a particular sector. Such a check list provides an indication of which data are necessary to permit future quantification.

The economic report topically outlined above will be completed by October, 1975, although efforts to refine the matrixing approach described in this section and adapt it to program needs will continue beyond that time. A total of \$63,156 is budgeted for this task, the bulk of which is allocated to salaries of coastal management personnel.

Funds are also included for interagency coordination and consultation, publishing costs, equipment, and other expenses.

TASK 2: RESOURCE CAPABILITY ANALYSIS

The resource capability analysis contains three subtasks:

- a. An area-wide inventory of resources
- b. Development of operational definitions for "direct and significant impacts" and "areas of particular concern"
- c. Preliminary documentation and evaluation of impacts

The resource inventories are largely complete, although further effort will be required to collate and compile data onto base maps. These inventories include: substrate, mineral resources, processes, soils, water, biota, current land use, manmade features, and a historical-archaeological survey. Work to be done includes the following:

1. The substrate map will be prepared as part of the contract with the Bureau of Economic Geology (BEG).
2. The mineral resource map will be compiled from the BEG coastal atlas plus information from the substrate map.
3. Processes will be compiled from BEG Coastal Hazards Atlas with addenda compiled by the Corps of Engineers and the U. S. Geological Survey for upland areas.
4. Biota will be inventoried by compiling of BEG coastal atlas maps and Texas Parks & Wildlife Department (TP&WD) addenda. The BEG and TP&WD contracts should accomplish this.
5. The water inventory will be refined, especially with respect to ground water.
6. The historical-archaeological survey is being prepared by the Texas Historical Commission (THC).
7. The current land use inventory will be developed from RB-57 photos, ERTS imagery, and other sources in order to update the five-year-old current land use inventory of BEG.

The second subtask, development of operational definitions for "direct and significant impact" and "areas of particular concern," and the third subtask will require the bulk of the funds and effort allocated to Task 2 in the second year.

A preliminary resource capability evaluation based on work by TP&WD and BEG will be presented for certain geographic areas in order to develop and satisfy a working definition of "direct and significant impact." The mechanism for initial assessment of "direct and significant impact" requires consideration of the interaction between economic and environmental factors. The matrixing technique described in Task 1 will be utilized in this evaluation process to array the possible impacts and to suggest the system of linkages through which a given impact is thought to occur. Meticulous care must be taken in proposing an operational meaning for "direct and significant impact," since the subject matter scope (activities affected) and the geographic scope (boundaries of the coastal zone) of a grant-eligible coastal management program are tied to the meaning given this phrase. The final meaning of "direct and significant impact" is not and cannot be set by scientific inquiry alone. Commentary by the advisory committee and the public and policy established by the Legislature will be required to resolve this issue. Nevertheless, the process begins with a proposal based upon current data and studies.

A second issue arising from initial technical studies and recommendations in this task is that of designating areas which may be of particular statewide concern because of their unusual economic value, biologic productivity, social importance, or hazardousness to the public. The Texas Parks and Wildlife Department, under contract to the General

Land Office, is developing recommendations as to the designation of such areas from a biologic perspective. Additional recommendations are being developed by the Texas Historical Commission and other agencies. These recommendations, along with others received from the public, will be reviewed by the advisory committee, discussed in the accommodation process described in Task 3, and commented upon in public hearings. Final recommendations will be proposed to the committee and, ultimately, to the Legislature.

Some work on this element will be performed by Coastal Management Program staff, and some will be subcontracted to the Bureau of Economic Geology, the Texas Parks and Wildlife Department, and the Texas Water Development Board. The work of this task will be closely coordinated with the contracting agencies, the Texas Water Rights Commission, the Texas Historical Commission, the Texas Department of Agriculture, and the COG's. This task is budgeted at \$162,176 and will require 54 man-months of staff time. Major expenses include aerial photography, mapping, computer time, report preparation, and publication.

TASK 3: THE ACCOMMODATION PROCESS

The objectives of this task are to

- a. determine broad priorities among the uses of coastal waters arising from national, state, regional and local preferences;
- b. identify those uses of lands and waters adjacent to coastal waters which affect coastal waters directly and significantly, and indicate which uses are compatible with the determined priorities;
- c. determine areas of statewide concern, such as major facilities, sites appropriate for restoration or preservation, areas essential to fish or wildlife productivity; and
- d. define the landward boundaries of the coastal area for the purposes of protecting and effecting the priorities determined.

Setting use priorities for coastal waters is not new to state or local government. For years, it has been an integral part of state, regional, and local plans and programs. However, it is important to review these priorities, since they have not been considered as a whole. This type of review is important to understanding the state's coastal policy in its totality. A second reason for these efforts to set broad priorities of uses is to note and seek resolution of any major conflicts which may be found.

Use priorities for coastal waters will be determined by asking representatives of the relevant community of users of coastal waters which benefits they want to receive from those waters and which events threaten to diminish or preclude those benefits. Obviously, the answers are expected to vary from one area to another, and within a given area many compatible priorities may coexist without further ranking among themselves. The difficulty of this task arises when

different coastal resource users hold conflicting priorities. In these cases, choices must be made: does the conflict involve to any substantial degree matters of greater than local concern? If not, the matter is not properly a concern of the state. If issues of greater than local concern are raised, how large a constituency do they touch and how strongly affected are the pertinent interests? These questions are raised in the balancing process. To some extent, state and local governments participating in this process are constrained by priorities protected by the Constitution and laws of the United States. The paramount navigational servitude of the U. S. in "navigable waters" cannot be overridden. Air and water quality standards required by the Clean Air Act of 1970 and the Federal Water Pollution Control Act Amendments of 1972 cannot be changed except by Congressional action, although administrative interpretation of these laws by federal agencies can be altered. On the other hand, local, regional, and state preferences can substantially modify and constrain federal coastal activities in other ways. Federal guidelines for the review of permit applications to the Corps of Engineers require that strong consideration be given to local and state preferences; and careful designation of dredged material disposal sites can substantially speed the dredging of ports and channels while protecting marine life. This process of identifying existing priorities and resolving conflicts among them should bring additional order and clarity to the variety of local, state, and federal preferences and constraints.

The second objective of the accommodation process calls first for a description of the uses of lands and waters adjacent to coastal

waters which affect coastal waters directly and significantly, and second for an indication as to which of these uses are compatible with the chosen priorities for each area. This amounts to asking, "Given the priorities for each coastal area, which events could significantly enhance or endanger the benefits sought from each area of coastal waters?" The intent of this inquiry is twofold: (1) to evoke consideration of the range of activities that might reduce or diminish the benefits people seek from particular coastal waters (and presumably to raise the question of what, if anything, needs to be done to prevent that reduction); and (2) to reduce governmental delays where permitting is required and provide clear signals to private coastal resource users as to which types of resource use are encouraged.

The determination of areas of particular concern to statewide policy, like the setting of priorities, is an activity which has been underway for years in government. The program's object is to call further attention to this process and to its current products so that clearer signals and better notice are given to all concerned. It is a matter of taking stock of those geographic areas which the state finds particularly important either by reason of their economic productivity, biologic value, amenity for human appreciation, or even by reason of their known hazards. Ultimately, such areas may need some enhanced posture in state policy to effectuate the state's concerns with them (e.g., to preclude a federal activity which would disrupt the area; to call attention to the special perils of the place; or to call for some affirmative action to purchase or restore the area). A great variety of ways may be found to protect, enhance, or restore

such areas; and what is done is, of course, a matter for public choice. Cognizance must be taken of these areas and of the reasons for their designation. The available scientific information pertinent to identification of candidate areas will have been compiled by various state agencies for review in this process.

The landward boundary of the coastal zone is identified in order to specify the geographic area to which the efforts of a coastal program are directed. The boundary of this area must be located no further inland than necessary to encompass the area in which state protection of coastal water priorities is necessary.

These four objectives are really no more than the requirements of reasonable public policy. Priorities are set and clearly announced; actions which may frustrate or effectuate these priorities are identified, so they may be appropriately encouraged or discouraged; and notice is given of particular state concerns in certain areas. To the extent that coastal resources are or can be allocated satisfactorily by market forces, the state should minimize its involvement by relying upon those forces; but where important positive and negative externalities and non-market goods are involved, carefully planned administration will be required.

It is anticipated that the accommodation process will begin with analyses of present indicators of coastal priorities and the state and national interest. Regional plans for the coastal COG's will be examined alongside current state plans (outdoor recreation, water basins, waste disposal, air and water quality, transportation, etc.). Relevant federal plans will also be reviewed, and reports by affected federal agencies of the national policies and priorities in Texas will be examined in light of manifest state and local preferences.

It is expected that these documents will provide only a first approximation of state and local priorities, since many changes of fact, expert opinion, and public preference may occur. These changes can be introduced in the meetings described below, in the public hearings, and in legislative consideration of the program recommendations.

The format for the accommodation process will be a sequence of meetings with local, regional, state, and federal representatives along the coast. At these meetings, analyses of various expressions of coastal priorities (plans, programs, statements of the national interest) will be presented, discussed, and refined. The views expressed will be noted, and tentative resolutions of conflicts will be proposed later to the advisory committee and presented at subsequent meetings for comment. This process will then culminate in the public hearing process where the proposed accommodations will once again be aired for comment.

Of the \$86,417 budgeted for this task, \$62,087 is allocated to the General Land Office for salaries and expenses; the balance will purchase technical services from the Texas Parks and Wildlife Department, the Texas Coastal and Marine Council, and others.

TASK 4: INSTITUTIONAL AND LEGAL ANALYSIS

The objectives of this task are to identify the current authority and jurisdiction of state and local governments and to identify any necessary modifications of existing legal and institutional structures. It is expected that the current authority and jurisdiction of state and local governments will suffice for most coastal management purposes. However, the present pattern of authority and procedures is complex, and efforts will be made to simplify these structures where this can be done without prejudicing private or public interests. Because of the dispersion of current authority pertaining to coastal resources, two other features of the institutional task are noteworthy: the vast majority of coastal management decisions will continue to be made where they are presently being made; and this study will emphasize stronger coordinating arrangements among decision-makers.

The subtasks of the institutional analysis include the following:

- a. Focusing upon each coastal issue anticipated or confirmed in the accommodation process to be of greater than local concern, to examine how the problem is presently handled by governments at the local, regional, state, and federal levels
- b. As to each level of government handling a problem set out in subtask a, note and evaluate the operative organizational arrangements and substantive policies with respect to
 - (1) Planning
 - (2) Public information and participation
 - (3) Coordination
 - (4) Implementation and enforcement

- c. As to newly identified issues for which no significant governmental mechanisms have been established in Texas, review the treatment given these problems in other jurisdictions, and assess how their treatment might be included in the Texas structure
- d. Recommend means for coordinating and reviewing the management activities conducted with respect to each of the identified coastal issues

A number of studies and documents bear directly upon this task; they include

- a. the H. B. 1502 study done by the Governor's Office;
- b. the NSF/RANN Chambers County study;
- c. the Texas Land Use Study;
- d. the reports of the state's natural resource agencies under the new Administrative Procedures and State Register Act; and
- e. various state and regional planning documents.

The work of this group will be reviewed periodically by the citizens' advisory committee and by interested agencies. This task will be coordinated with the accommodation process and the federal coordination task. The principal entities expected to work on this task include the Water Quality Board, the Air Control Board, the Water Rights Commission, the Water Development Board, the Highway Department, the Governor's Office, the Coastal and Marine Council, the Corps of Engineers, the Attorney General, and the COG's. Others will be added as they declare an interest in the task.

The ICNRE will exercise a strong oversight and review input in this task. Additionally, close coordination with the involved local jurisdictions will be maintained through the DPC relation to the COG's along the coast.

This task is budgeted at \$89,700, including \$4,000 for a contractor to be selected, and the balance for salaries and expenses of the General Land Office and the Texas Coastal and Marine Council personnel who will conduct this study.

TASK 5: PUBLIC INFORMATION AND COMMENTARY

Continuous public contact must be maintained during the technical studies step. To meet this need, the Coastal Management Program staff, in coordination with the ICNRE, the Texas Coastal and Marine Council, Marine Advisory Services of the Texas A&M University Sea Grant Program, and local governments, will do the following:

- a. Work closely with the Citizens' Advisory Committee appointed by the Commissioner of the General Land Office

(The committee, representing major interests on the Texas coast, will meet quarterly; but members will be encouraged to make recommendations or ask for information at any time.)

- b. Prepare and distribute a wide variety of printed materials describing the program and its work

(A quarterly newsletter will be published, and a second general purpose brochure will be prepared for mailing to the approximately 5,000 names on mailing lists and for distribution by local chambers of commerce, civic groups, etc. Technical reports produced by the program will be distributed to appropriate audiences.)

- c. Establish a media center with a slide library, equipment for showing materials produced to public audiences, and a distribution system to ensure that potential audiences can easily obtain programs, films, slide shows, etc.

(At least one multi-media show will be produced by the program staff.)

- d. Conduct a series of workshops in coastal cities and elsewhere to report on the program's progress to a wide audience of interested organizations and individuals

(These workshops, similar to the one held successfully in August, 1974, will give interested parties an opportunity for active participation.)

- e. Produce a series of short 16mm color films aimed at specific key interests or sectors

(One film, for example, may focus on the relationship of the program to agriculture, or another on water in the coastal area. Three such films of approximately 10-12 minutes each are planned to supplement the 25-minute general introductory film scheduled for completion in August, 1975.)

- f. Schedule a series of speaking engagements and briefings by the Coastal Management Program director and staff members before interested groups, especially at the local level
- g. Utilize outside consultants for specific projects, such as preparation of materials for specialized trade journals and other media
- h. Make preparations for a series of public hearings to begin in coastal cities in June, 1976

(Media releases, legal notices, scheduling, and distribution of program materials to as wide an audience as possible will be necessary.)

This task is budgeted at \$191,431 for the current year, including \$55,567 for consultants to be named and \$4,000 for the Coastal & Marine Council.

TASK 6: FEDERAL COORDINATION

This task comprises the efforts which will be made in the second year to coordinate the development of the coastal program with all federal agencies either known or thought to have an interest in the coastal zone of Texas.

Coordination efforts will be led by the institutional specialist, with significant time being contributed by the director, the administrative assistant, the resource capability specialist, the resource demand specialist, and others from the program staff. The principal coordination mechanisms used will be a sequence of staff conferences among affected agencies in which four matters will be approached:

- a. The articulation of the national interest
- b. The accommodation of that interest with state and local demand projections
- c. A critique of the institutional means by which the state proposes to protect the national interest
- d. The designation of those lands excluded from the coastal zone by the federal exclusion provisions of the definition of the coastal zone

Clearly, the federal coordination task requires the participation not only of the federal agencies, but also of state and local entities. For this reason, state and local interests will be advised continuously of their opportunities to participate in the process.

This task, budgeted at \$48,237 for the current year, will be performed by the General Land Office, which will use the funds for salaries, travel, per diem, and other expenses.

TASK 7: COASTAL INLAND CANALS

Waterway access is an important site requirement for many coastal industries. For this reason, many plants have located along Texas' bay margins or near the mouths of rivers flowing into those bays.

Typically, these sites are subject to greater hurricane and flood damage because of their locations. In addition, they require substantial dredging to maintain the necessary channel depths and widths. Furthermore, as the competition for sites with waterway access turns from the better sites toward less suitable ones, non-industrial users of waterside property are increasingly drawn into competition for these resources. Given this situation, the question arises whether it would be feasible and advantageous to cut one or more canals from the bays or rivers across dry land. Such a new canal might offer several advantages:

- a. It could add prime industrial locations;
- b. The necessary channels could be sited in soils requiring less maintenance dredging than a similar length of channel in a natural water body;
- c. Channel sites could be chosen to avoid or minimize many environmental problems; and
- d. Natural waterfront sites would remain available for other uses.

Although the cost of canal construction might be high, it could be more than offset by the savings in maintenance dredging. The costs incurred in establishing the canals would include the cost of construction and maintenance and the potential costs necessary to induce industries to locate along these channels. The extent of locational costs, and to some degree the construction costs, would

depend on the quantity and location of suitable sites along the coast for the canals. The potential savings, on the other hand, would be both monetary and environmental. Less dredging would be required to maintain this channel than to maintain a similar one through a natural water body; therefore, not only the money cost but also the environmental cost of dredged material disposal should be reduced.

The feasibility of this proposal rests upon the answers to several questions:

- a. Are the primary savings large enough relative to the costs of constructing and maintaining the canals?
- b. Are there sufficient environmental savings to make a difference in the level of primary benefits obtained?
- c. Do the secondary economic costs and benefits which accompany the shifting of future growth from bay and river sites to canal sites warrant consideration of such a project?
- d. Given the siting requirements of the expected future canal users, are there sufficient resources at any potential canal site to induce the requisite change in growth patterns?
- e. Will the existing institutional framework be capable of sustaining such an expansion?

The Coastal Management Program will address these questions in a special feasibility study of inland canals. The study will run for two years. The first year of work will cost \$71,761. The project manager will be drawn from the Coastal Management Program staff, but the study will be conducted under contract by a university research group or a private firm. The design of the study will be coordinated with the Governor's Office, the General Land Office, the Coastal and Marine Council, the ports, the Texas Industrial Commission, and the coastal councils of governments.

TASK 8: STUDY OF THE PLACEMENT OF DREDGED MATERIALS FROM TEXAS PORTS AND CHANNELS

This study is designed to provide information relevant to the issue of minimizing the environmental impact of necessary navigational improvements and evaluating the trade-offs associated with navigational development. The principal entities with whom such a study will be coordinated are: the U. S. Army Corps of Engineers, the Environmental Protection Agency, the Governor's Office, the Texas Highway Department, Texas A&M University, the Water Quality Board, the Parks and Wildlife Department, the Bureau of Economic Geology, the navigation districts, local governments, and interested user groups.

The study will begin this summer with a one- or two-day informational briefing to which interested parties are invited to make presentations. The steps in developing this study are as follow:

- a. Search literature to identify recent relevant studies and projected or ongoing work with which coordination should be established. This work will be coordinated with the study authorized by H.S.R. 81 (64th Session).
- b. Regionalize the coast along lines used by the Coastal Management Program.
- c. For each deepwater port, calculate the volumes of virgin and maintenance spoil which must be disposed of, assuming expansion to fully authorized dimensions (ports' firm plans).
- d. Segment that part of the Gulf Intracoastal Waterway (GIWW), which is or would be maintained by pipeline dredge into two-mile reaches, then calculate the volume of virgin and maintenance spoil required to be disposed of in each such reach
 - (1) assuming that main and tributary channels remain at present dimensions; and then,

- (2) assuming the segment from Galveston to the Louisiana line is enlarged to 250 feet in width to accommodate twin tows, but otherwise as in assumption (1) above.
- e. Determine the pollutants and pollution potentials of typical spoils in the major ports and waterways of Texas.
- f. On the basis of:
 - (1) substantiated biologic judgments as to critical environments supplied in mapped format by TP&WD (prepared under prior contract with the Coastal Management Program);
 - (2) mapped information as to GIWW spoil disposal easements owned by the United States; and
 - (3) present EPA regulations (FR May 6, 1975) as to acceptable dredged materials disposal sites;determine the capability of known acceptable sites to accommodate the volume and character of dredged materials resulting from the dredging set out in steps c and d.
- g. Identify
 - (1) the beneficial uses of dredged material, means of enhancing such benefits, and the costs associated with such uses and enhancement; and
 - (2) the adverse consequences of the dredging and placement of such materials, the means of mitigating such consequences, and the costs associated with such consequences and mitigating practices.
- h. Identify the economic and engineering constraints upon dredged material disposal.
- i. Depict and discuss the means and consequences of spoil disposal for each alternative in steps c and d (this calls for maps of incremental spoil disposal space required, and economic and social costs of increasing, accommodating, or restricting navigational development in particular regions).
- j. Identify the beneficiaries of dredging under the alternatives set out above, and identify those

bearing the social and economic costs of such dredging.

- k. Propose a disposal plan for Texas, including parameters and criteria designating types of sites acceptable, unacceptable, and marginal for spoil disposal.

The product resulting from this study should

- (1) document the scope of the imminent conflict of uses; and
- (2) set out a proposed resolution substantiated by staff analysis and the data provided by state agencies.

In addition, a layman's summary not longer than 20 pages will be prepared.

This study is budgeted for the current year at a cost of \$99,536, of which \$49,536 is for General Land Office, Parks and Wildlife, and Coastal and Marine Council studies. The balance, \$50,000, is for studies by a prime contractor yet to be selected.

It is uncertain at this time whether the contractor on this study should be a governmental or private entity. Comments on this point especially are solicited.

TASK 9: NATURAL COASTAL HAZARDS

The Texas coastal area is subject to a variety of natural physical processes which pose serious threats to life and property. Of these processes, hurricanes are the most spectacular and destructive. Galveston was the site of the nation's worst natural tragedy when a hurricane claimed over 6,000 lives in 1901. Hurricanes strike the Texas coast on the average of once every two years. As coastal population increases, development continues, and the potential for a major disaster grows. The threat is compounded by the demand for residential development--both permanent and recreational--causing hundreds of additional dwelling units to be located in low-lying and exposed areas around the bays and on the barrier islands. Ignorance of the potential violence of hurricanes and the basic human tendency to believe "it can't happen to me," contribute to the hazard. This hurricane threat must be considered in planning activities.

Other natural processes posing significant coastal hazards include

- a. shoreline erosion and accretion, which may adversely affect valuable shoreline property;
- b. fresh water flooding (non-hurricane);
- c. land subsidence, which both increases the flood threat and causes differential settling of property; and
- d. faulting.

Parts of this problem have been treated by many different federal, state, and local agencies, private organizations, and individuals. The objectives of this task are to identify and classify those areas along the Texas coast which are particularly susceptible to damage by these

natural hazards and to develop model minimum building standards for such areas.

Two legislative resolutions (S.R. 268, H.S.R. 80) have recently directed consideration of the following topics:

- a. The nature and extent of natural processes and forces associated with hurricanes including, but not limited to, wind, surge tides, scour, and aftermath flooding
- b. The degree of exposure and susceptibility to destructive forces
- c. The structural and foundation design and construction practices which reduce vulnerability
- d. The levels of acceptable risks associated with protection of lives and mitigation of property damages
- e. The impact on insurance availability and cost
- f. The economic and financial implications
- g. The enforcement aspects
- h. The current activities which may increase the risk to life and property from natural forces and hazards
- i. Any other matters the responsible agencies deem appropriate

A substantial effort in this direction has been initiated by the Texas Coastal and Marine Council and the Bureau of Economic Geology, where the principal natural hazards of the Texas coast have been identified and mapped. The Division of Disaster Emergency Services of the Governor's Office is charged with developing and maintaining a comprehensive state disaster plan. The Texas Insurance Board supervises a "catastrophe insurance pool," whereby property owners in vulnerable coastal areas can obtain insurance.

Dade County, Florida, has developed special hurricane-resistant

construction procedures, and a few coastal communities have taken limited action to establish and enforce special codes. The Corps of Engineers, the National Oceanic and Atmospheric Administration, and other agencies have also conducted or assisted research in this area. What is needed is a mechanism to identify and adapt the relevant parts of these efforts to Texas' own requirements.

Principal responsibility for this task will rest with the Texas Coastal and Marine Council.

As now envisioned, this task will have the following elements:

- a. Formulation of Specifications for Request for Proposals (RFP): During the summer of 1975 the Council will convene a small (4-6) consulting panel of experts to formulate questions and to assemble a RFP for the development of the actual model standards. This group will consist of persons who are familiar with hurricanes and specialized hurricane-resistant codes, and who are experienced in Texas coastal construction. Representatives of the General Land Office and the Division of Disaster Emergency Services will be included also.
- b. Development of Model Standards: An RFP will be let, and a principal contractor will be selected to draft the model minimum standards under the supervision of the Texas Coastal and Marine Council and its consulting panel.
- c. Report to the Legislature: The Council, in cooperation with the consulting panel and the General Land Office, will prepare a report for the 65th Legislature recommending how natural hazard/disaster elements should be incorporated into a coastal program.
- d. Publication of the Model Minimum Building Standards: Completion of all technical aspects of the standards will continue through the end of September, 1977, as called for in the legislative resolutions. This work will continue after completion of the legislative report (see c. above) with publication of detailed materials.
- e. Implementation: This will continue beyond 1977

as the model standards are utilized by various state agencies (for example: General Land Office for coastal planning, Insurance Board in conjunction with rate-setting for catastrophe pool, Division of Disaster Emergency Services for disaster planning, etc.) and by local governments unable to fund development of their own original codes.

This task is budgeted at \$44,945 for the current year, with \$25,000 for the principal contractor and \$19,945 for expenses of the General Land Office.

TASK 10: THE COASTAL PERMITTING PROCESS

Major concern was expressed at every public hearing regarding the permitting process to be followed for developments or activities to take place in coastal areas. At every hearing statements were submitted to the effect that the permitting process is confusing, that too much time elapses before action is taken by the permitting agencies, and that regulations of permitting agencies overlap and often conflict. Consequently, a special study will be made of the permitting process to determine how the process might be modified to alleviate some of the problems, while ensuring that the public interest remains adequately protected.

A considerable amount of information is available in addition to the research performed during the first year of the Coastal Management Program: HB 1502 Study, Lyndon Baines Johnson School Study, Chambers County Study. Many permitting agencies have already been identified, and others will be added to the list as the study progresses. It will then be necessary to determine what kinds of permitting authority are vested in these agencies, and what types of activities fall within their jurisdictions.

There are, of course, several major federal programs which must be considered. Environmental Protection Agency regulations will be of prime importance, and recent judicial decisions have required the U. S. Corps of Engineers to exercise broader permitting authority than it has in the past. Additionally, the impact of the Flood Disaster Protection Act of 1973 is now beginning to be felt and is having a significant effect on building permits and regulations.

These and other permitting procedures will be thoroughly studied in this research project.

In addition to the research efforts already mentioned, interviews will be conducted with individuals, organizations, or other interest groups which have applied for permits to pursue specific activities in the coastal area. These activities may include

- a. residential or commercial real estate development;
- b. power plant siting;
- c. development of recreational facilities;
- d. construction of manufacturing facilities;
- e. pipeline construction;
- f. oil-well drilling, both onshore and offshore;
- g. dredging operations, both new and maintenance dredging;
- h. farming operations;
- i. building operations;
- j. expansion of docking or port facilities;
- k. waste disposal; and
- l. water rights

Individuals and groups who made statements at the public hearings have indicated willingness to provide assistance to the staff in its research activities. Accordingly, they will be asked to recall the steps they followed in applying for permits; the agency or agencies from which permits were required; the geographical areas from which the applications were submitted; the type of information which was required to justify the permit; the overlapping or redundancy of agency requirements; requirements which might be contradictory to

each other; problem areas which were encountered; and any suggestions as to the manner in which this process might be improved. Facts reported will be documented through an examination of legal documents, correspondence, fiscal records, or other appropriate records made available by the person or organization being interviewed.

This study will provide data and recommendations for improvement of the permitting process. It is likely that certain modifications or combinations of permit requirements will be indicated to simplify the permitting process. On the other hand, this research may show that many present permitting procedures, though cumbersome, are necessary to protect the public interest. This must also be tied to a review of what public interest is to be protected by the permitting processes. This will be treated by the institutional study and enhanced by the federal coordination effort. Whatever these conclusions may be, they will be stated in a comprehensive report along with the rationale upon which they were based.

This study will run for 12 months, beginning June 1, 1975, and will be performed by a private consultant and coordinated through the ICNRE. All ICNRE agencies will be invited to work with the coastal program and its consultants on this task.

The total current year budget for this task is \$57,047, of which \$35,000 is for consulting studies by a contractor not yet selected. The Texas Coastal & Marine Council has been allotted \$4,000; and the balance will go to the General Land Office for studies and other expenses.

TASK 11: COASTAL IMPACTS OF OUTER CONTINENTAL SHELF DEVELOPMENT

The nearshore and onshore impacts of extensive federal OCS mineral development offshore Texas are largely unknown. Preliminary analyses suggest that expansion of exploration and production efforts on federal OCS lands will have a marked and significantly adverse impact upon onshore institutions and facilities. Prior to incidence of these impacts, a carefully developed study should be performed so that adverse impacts may be avoided or mitigated. Topics to be addressed include the increased need for marine facilities and navigational improvements, the selection of pipeline corridor sites through state waters and inland, the expansion of storage and refining facilities, the secondary impacts of this infusion of money and jobs, the sudden increase in demand for governmental services, and techniques for mitigating adverse impacts.

This two-year study will be divided into three parts: a methodological design analysis to run four months, a 20-month study to execute the design cast in the initial four months, and a two-year mapping program for nearshore waterbottoms to run concurrently with the other two parts of the study. Preliminary results of this work will be used both in the accommodation task to refine projections of supply and demand, and in the public information and commentary phase to inform the public of relevant options. Later progress reports from this study will be utilized to update program materials at appropriate points.

The methodological design analysis will be subcontracted to a private firm; however, work will be directed by a project manager on

the Coastal Management Program staff. Elements of the work program of this subtask will include a literature review to compare recently used methodologies, an examination of means of utilizing the state's input/output economic modeling capability, and an analysis of how the various other data and data formats in use by state and regional planners can be utilized in the study. The conduct of this study will be coordinated with the member agencies of the ICNRE and with the Texas Coastal and Marine Council.

The onshore impacts study designed in the first four months will be conducted by a private consulting firm. A project manager from the Coastal Management Program will direct the work, which will run for the balance of the first year. The elements of this subtask will be determined by the methodological design recommended in the prior subtask. It is expected, however, that certain geographical areas will be identified for priority treatment due to the imminence or magnitude of impact. These areas will be considered first in order to incorporate the most valuable information into the accommodation task and to disseminate this information to the public at the earliest possible time. This subtask will be coordinated with the same groups as the methodological design analysis and with other groups declaring an interest.

The nearshore mapping subtask will be contracted to the Bureau of Economic Geology. The state submerged lands, extending offshore from the strand to the three-league limit, form a zone of imminent intensive uses and activities. These include offshore petroleum and mineral production, placement of pipelines, siting of offshore shipping

terminals, and placement of offshore nuclear power plants. It is impossible to evaluate the feasibility of these activities and their associated impacts without maps depicting substrate, biota, and processes; but these maps are not available. Such maps are currently being generated for the federal lands offshore Texas by the U. S. Geological Survey. However, except for a pilot study of a small area near Aransas Pass, no such work has been done on state-owned lands.

In order to evaluate resources of these state lands, and in order to assess impacts of various activities, a systematic mapping program is needed. This mapping will require several geologists and a boat with facilities for substrate sediment and infauna grab-sampling, shallow piston-core extraction, and geophysical instrumentation for determining shallow-sediment geometry (sub-bottom profilers). Approximately 3500 sampling stations should be established at one-mile centers.

From the data collected, the distribution of bottom sediment to shallow depth and biologic assemblages can be mapped. Also inferences can be drawn regarding processes acting to distribute sediments. These maps can be used

- a. to evaluate offshore sediment budget, which is of prime importance to such coastal processes as shoreline erosion and accretion;
- b. to delineate offshore depositional trends, which will aid in assessment of potential mineral localities; and
- c. to show which areas are amenable to the placement of facilities with least environmental harm or onshore human hazards.

A project manager from the Coastal Management Program staff will direct work on this subtask. Coordination will be arranged through

the Governor's Office, the Federal Regional Council, the Gulf Subcommittee of the Interior Department's Southwest Regional Field Committee, and the Sea Grant Program of Texas A&M University.

This task will take two years and is budgeted at \$275,000 for the current year. A total of \$125,000 is allocated to the Bureau of Economic Geology for mapping, and the balance of \$150,000 is designated for contractors not yet selected.

TASK 12: ADMINISTRATION

This task comprises the customary administrative duties of project management: development of work plans, supervision, coordination of efforts within the program, interpretation of the program to other agencies and the public, report writing, recordkeeping, personnel management, budgetary control, etc. This work will be performed by a program director, his administrative assistant and portions of the time of other staff members.

The budget for this task also includes all program expenses for telephone service, word processing, rent, equipment and supplies. The administrative budget for the current year is \$153,995.

BUDGET SUMMARY

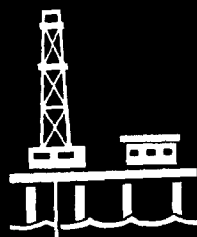
C O N T R A C T O R S

Task	Person Months Staff Time	General Land Office	Parks & Wildlife Dept.	Coastal & Marine Council	Bureau of Economic Geology	To Be Selected (Number)	Years	Total Cost This Year
1 Resource Demand	38	\$61,156				\$2,000	1	\$ 63,156
2 Resource Capability	54	82,896	\$15,280			64,000(2)	1	162,176
3 Accommodation Process	37	62,087	18,330	\$2,000		4,000	1	86,417
4 Institutional & Legal	48	81,700		4,000		4,000	1	89,700
5 Public Commentary	73	131,864		4,000		55,567(2)	2	191,431
6 Federal Coordination	28	48,237					1	48,237
7 Inland Canals	21	27,595	9,166			35,000	2	71,761
8 Dredged Materials	25	31,312	12,224	6,000		50,000	2	99,536
9 Natural Hazards	20	19,945		25,000			1	44,945
10 Permitting Process	11	18,047		4,000		35,000	1	57,047
11 Coastal Impacts - OCS	N/A				\$125,000	150,000(2)	2	275,000
12 Administration	29	153,995						153,995
TOTAL	384	\$718,834	\$55,000	\$45,000	\$125,000	\$399,567		\$1,343,401

COASTAL MANAGEMENT PROGRAM

TASK SCHEDULE

1975												1976												1977												
J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J												
Task 1 Resource Demand																								FINAL REPORT												
Task 2 Resource Capability																								LEGISLATIVE REPORT												
Task 3 Accommodation Process																																				
Task 4 Institutional and Legal																																				
Task 5 Public Commentary																																				
Task 6 Federal Coordination																																				
Task 7 Inland Canals																																				
Task 8 Dredged Materials																																				
Task 9 Natural Hazards																																				
Task 10 Permitting Process																																				
Task 11 OCS Study Design												OCS Study Execution Impact Mapping																								



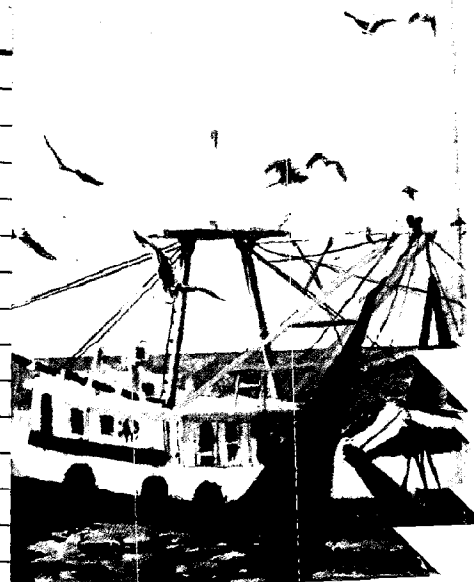
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